IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended) An image encoding apparatus comprising:

a dictionary storage <u>device configured to store</u> ~~means for storing~~ a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

a <u>converted configured to decompose</u> ~~conversion means for decomposing~~ a coding target image by using the plurality of bases on the basis of a predetermined conversion rule, and ~~converting~~ <u>to convert</u> the coding target image into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

an <u>encoder configured to generate</u> ~~encoding means for generating~~ compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 2 (Currently Amended) An image encoding method comprising:

~~a conversion step in which conversion means decomposes~~ <u>decomposing</u> a coding target image on the basis of a predetermined conversion rule by using a plurality of bases stored in dictionary <u>storage device</u> ~~storing means~~ and ~~converts~~ <u>converting</u> the coding target image into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is

multiplied,

and positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored,

wherein the plurality of bases are based on a predetermined two-dimensional function

for generating a predetermined two-dimensional pattern, and the predetermined two-

dimensional function includes parameters for curving the predetermined two-

dimensional pattern; and

~~an encoding step in which encoding means generates~~ generating compression data

including a compression code made by encoding the basis information on the basis of a

predetermined compression coding rule.

Claim 3 (Original) An image encoding method according to claim 2, wherein the

predetermined two-dimensional function further includes parameters for making the

predetermined two-dimensional pattern move, rotate, and expand and shrink in two

directions.

Claim 4 (Currently Amended) An image encoding method according to claim 2,

wherein the encoding ~~means~~ incorporates the parameters of each of the plurality of bases

stored in the dictionary storage device ~~means~~ in the compression data.

Claim 5 (Currently Amended) ~~An image encoding program allowing a computer to~~

~~function as:~~ A computer readable medium encoded with a computer program configured to

cause an information processing apparatus to execute a method, the method comprising:

~~dictionary storage means for~~ storing a plurality of bases based on a predetermined

two-dimensional function for generating a predetermined two-dimensional pattern, the

predetermined two-dimensional function including parameters for curving the predetermined

two-dimensional pattern;

~~conversion means for~~ decomposing a coding target image by using the plurality of

bases on the basis of a predetermined conversion rule, and converting the coding target image

into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is

multiplied,

and positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored;

and

~~encoding means for~~ generating compression data including a compression code made

by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 6 (Currently Amended) An image decoding apparatus comprising:

<u>a</u> dictionary storage <u>device configured to store</u> ~~means for storing~~ a plurality of bases

based on a predetermined two-dimensional function for generating a predetermined two-

dimensional pattern, the predetermined two-dimensional function including parameters for

curving the predetermined two-dimensional pattern;

<u>a</u> decode configured to decode ~~decoding means for decoding~~ compression data and

~~generating~~ <u>generate</u> a basis information, the compression data including,

a compression code made by encoding the basis information including index

information to a basis used for restoring a decoding target image,

a coefficient by which the basis specified by the index information is

multiplied,

and positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored;

and

~~an~~ inverse converter configured to generate ~~conversion means for generating~~ the

decoding target image by applying a predetermined inverse conversion rule to the basis

information decoded by the decoder ~~decoding means~~.

Claim 7 (Currently Amended) An image decoding method comprising:

~~a step in which decoding means decodes~~ decoding compression data including,

a compression code made by encoding basis information including index

information to a basis used for restoring a decoding target image on the basis of a

predetermined inverse conversion rule among a plurality of items of index

information to a plurality of bases stored in a dictionary storage device ~~means~~,

a coefficient by which the basis specified by the index information is

multiplied, and

positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored,

wherein the plurality of bases are based on a predetermined two-dimensional function

which generates a predetermined two-dimensional pattern and includes parameters for

curving the two-dimensional pattern; and

~~an inverse conversion step in which inverse conversion means generates~~ generating

the image ~~for~~ to be ~~decoding~~ decoded by applying a predetermined inverse conversion rule to

the basis information decoded by the decoder ~~decoding means~~.

Claim 8 (Original) An image decoding method according to claim 7, wherein the predetermined two-dimensional function further includes parameters for making the predetermined two-dimensional pattern move, rotate, and expand and shrink in two directions.

Claim 9 (Currently Amended) The image decoding method according to claim 7, wherein the decoder ~~decoding means~~ makes the dictionary storage ~~storing means~~ device store the plurality of bases on the basis of parameters for generating each of the plurality of bases included in the compression data.

Claim 10 (Currently Amended) ~~An image decoding program allowing a computer to function as:~~ A computer readable medium encoded with a computer program configured to cause an information processing apparatus to execute a method, the method comprising:

~~dictionary storage means for~~ storing a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

~~decoding means for~~ decoding compression data and generating a basis information, the compression data including,

a compression code made by encoding the basis information including index information to a basis used for restoring a decoding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored;

and

~~inverse conversion means for~~ generating the decoding target image by applying a

predetermined inverse conversion rule to the basis information to be decoded ~~by the decoding~~

~~means~~.

Claim 11 (New) An image encoding apparatus comprising:

dictionary storage means for storing a plurality of bases based on a predetermined

two-dimensional function for generating a predetermined two-dimensional pattern, the

predetermined two-dimensional function including parameters for curving the predetermined

two-dimensional pattern;

conversion means for decomposing a coding target image by using the plurality of

bases on the basis of a predetermined conversion rule, and converting the coding target image

into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is

multiplied,

and positional information for specifying a position where a pattern made by

multiplying the basis specified by the index information by the coefficient is restored;

and

encoding means for generating compression data including a compression code made

by encoding the basis information on the basis of a predetermined compression coding rule.